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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,848	06/24/2003	Yoshinori Tanaka	1324.68109	9315

7590 04/13/2007  
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EXAMINER
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CHEN, WEN YING PATTY

ART UNIT	PAPER NUMBER
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2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/602,848	Applicant(s) TANAKA ET AL.	
	Examiner W. Patty Chen	Art Unit 2871	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14, 15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 is/are allowed.
- 6) ☒ Claim(s) 14, 15, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/607,104.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/10/06</u> . | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Response to Amendment*

Applicant's Amendment filed Dec. 26, 2006 has been received and entered. Claims 13 and 20-21 are cancelled per the Amendment filed. Therefore, claims 14, 15 and 17-19 are now pending in the current application.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 14 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. (US 5781253) in view of Fujita et al. (US 6184966).

With respect to claim 14 (Amended): Koike et al. disclose in Figures 1-3 an active matrix type liquid crystal display comprising:

a switching element (element 26) formed for each of a plurality of pixels defined by a plurality of bus lines (elements 10 and 46); and

an electrostatic protection element portion (element 44) formed between the adjacent bus lines;

wherein the electrostatic protection element portion comprises a plurality of metal layers (elements 52 and 54) directly formed on the same layer (as shown in Figure 3), an insulating layer (element 56) formed on the plurality of metal layers, a contact hole (element 58) formed by opening the insulating layer on the plurality of metal layers, and a connecting layer (element 48) electrically connecting the metal layers via the contact hole.

Koike et al. failed to specifically disclose that the connecting layer is formed by a material for a pixel electrode formed in each of the plurality of pixels.

However, Koike et al. further teach in Column 6 lines 39-44 that the connecting layer can be formed simultaneously with any of the metal layers and/or with various types of metal and Fujita et al. disclose in Figure 3 and Column 6 lines 42-56 a connecting layer (element 13) formed of a same material as each pixel electrode in the plurality of pixels.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct an active matrix type liquid crystal display as taught by Koike et al. wherein the connecting layer is formed by a material for forming a pixel electrode as taught by Fujita et al., since Koike et al. teach that it is convenient to form the connecting layer while forming other metal layers, such that no extra deposition/patterning step is necessary (Column 6, lines 39-44).

As to claim 18: Koike et al. further disclose in Figure 3 that the insulating layer (element 56) is a single layer.

As to claim 19: Koike et al. further disclose in Figure 3 that the connecting layer is a single layer (element 48).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US 6043971) in view of Matsumoto (US 6211534).

Song et al. disclose in Figure 5 an active matrix type liquid crystal display comprising:  
a switching element (not shown; Column 4, lines 20-23) formed for each of a plurality of pixels defined by a plurality of data bus lines (element 2) and gate bus lines (element 1);  
a first common wiring (element 12b) connected to the data bus lines;  
a second common wiring (element 12a) connected to the gate bus lines; and  
an electrostatic protection element portion (element 13) formed between the first common wiring and the second common wiring.

Song et al. fail to specifically disclose the structure of the electrostatic protection element portion.

However, Matsumoto discloses in Figures 2-4 an electrostatic element portion (element 11) comprises a plurality of metal layers (elements 4 and 7) directly formed on the same layer as the first common wiring or the second common wiring (wherein the metal layers are formed on the same layer as the second common wirings which connect to the gate bus lines), an insulating layer (element 29) formed on the plurality of metal layers, a contact hole formed by opening the insulating layer on the plurality of metal layers (as shown in Figure 3), and a connecting layer (element 27a) electrically connecting the metal layers via the contact hole.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct an active matrix type liquid crystal display as taught by Song et al. wherein the electrostatic protection element portion has the structure as taught by Matsumoto, since Matsumoto teaches that by forming the electrostatic protecting element portion with such structure helps to suppress leak current by supplying large resistance, thus helps to prevent damages to the array substrate due to abnormal discharge of current (Column 10, lines 9-13 and Column 3, lines 48-67).

#### *Allowable Subject Matter*

Claim 17 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

None of the prior arts either alone or in combination fairly teach or suggest that the contact resistance through the contact hole on a multi-layer structured metal layer is equal to 35 to 36 k $\Omega$ .

Therefore, claim 17 is deemed non-obvious and inventive over the prior arts, thus is allowable.

### ***Response to Arguments***

Applicant's arguments, filed Dec. 26, 2006, with respect to the rejection(s) of all claim(s) under 35 U.S.C. 103(a) as being unpatentable over Koike et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Koike et al. and Fujita et al. as set forth above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. Patty Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W. Patty Chen  
Examiner  
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WPC  
4/05/07

